

REDUCING UNIT COSTS THROUGH BUSINESS ANALYSIS

A great many REA borrowers are now at that stage of life where they need to take stock of themselves to see where they are, where they have been, and where they are going. On a limited scale, limited by manpower and money, the Management Division is expanding its services to borrowers to include a full scale and detailed management analysis program which will help you put the microscope on every area of the operation of your rural electric system. The result is a full picture of the enterprise set in perspective which permits prompt identification of areas of present and potential dangers and has the long term advantage of permitting borrower management to plan for the future on the basis of a real study of its own recorded experience. At the same time, comparable performance standards of other like enterprises are being introduced so that valid comparisons of results may be made in both selected areas and on an overall basis.

WHY THE INTEREST IN UNIT COST REDUCTIONS?

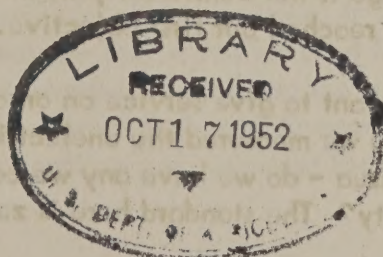
REA borrowers are gradually emerging from the heavy construction stage and entering the long-pull operations stage. You have many tough problems of construction ahead to reach area coverage, but your backbone systems are substantially in the operating stage. What does this mean in specific terms of who does what now? It means that you people in responsible management positions are wisely interested in taking stock of yourselves - in finding out exactly where you stand today in relation to your goals or objectives. It means that you are interested in charting your course of action for the job ahead to reach your objectives.

WHAT ARE YOUR OBJECTIVES?

Since we must all agree on the same goal post to head for, or we cannot pull together in the same direction as a team, let's take a moment to mention the three basic objectives generally accepted as our ultimate aim. They are:

1. To provide adequate and reliable electric service on an area coverage basis.
2. To provide that service at the lowest possible cost over the long run, and to take in just enough revenue to cover that cost.
3. To remain in business permanently as a locally owned and controlled enterprise.

If these objectives are reached and consistently maintained, will not your job have been well done?



WHAT DOES IT TAKE TO REACH OUR OBJECTIVES?

What do we need - what are the component parts of the business required to reach objectives? What do we need to analyze? We need:

1. Adequate physical facilities
2. Adequate electric energy
3. Adequate equipment, materials, money
4. Adequate records reflecting facts accurately
5. Adequate people to do the work
6. Adequate management to put the other elements together in the right manner, at the right times, at the right places, in the right proportions, and in the right time sequence to produce desired results.

The REA loans provide the resources by which you can get your plant, your energy, and your equipment, but REA is only able to advise and assist you as local responsible owners in your task of developing your records, your people, and your management.

HOW DO WE FIND OUT WHERE WE STAND AND HOW WE ARE PROGRESSING?

We analyze - and by that we mean basically we measure. What is measurement? It is comparison of an unknown with some known fixed standard. Take a simple sheet of paper. If we want to analyze it - measure it- we get a ruler, a known fixed standard, and compare the paper with the ruler. Unfortunately, a business is not so simple- measurements of business are much more complex, but the basic process is the same.

MEASURING THE TOTAL BUSINESS

In measuring a business, we may start with the overall total business, comparing it, as it is, with some known standard which ties in with our basic objectives. For example:

Objective 1 says we want to give adequate service. So we ask, is our voltage consistently within the range at 110 volts to 125 volts, which is generally accepted as a standard for good electric service? If our voltage is not consistently within that range, we know we have not fully reached our first objective.

Objective 1 says we want to give service on an area coverage basis. So we ask, have we measured the unelectrified consumers within our service area - do we have any we could reach who want electricity? The standard here is zero.

Objective 3 says we want to remain in business permanently with local ownership and control. So we ask, among other things, have we measured community relations - do we know what people think of us? Have we recognized the fact that here in this country the people have the ultimate power and authority, and therefore the people can (and have) gotten rid of an organization they don't like and want?

Objective 2 says we want to give service at minimum cost with just enough revenue to cover that cost. So we compare our total costs or obligations with our total revenues or resources. If the resources cover the obligations without too much excess, we havz met all but one little part of that objective. We still have not measured our costs to find out whether they are minimum costs.

That brings us to the point in our discussion where we should like to go into just a little more detail. We think it is important, in considering a business analysis, that all of the specific component details be set in their proper perspective - it is important that we do not forget the forest when we are looking at the trees. It is essential that we keep proper balance with all of our objectives in mind. Therefore, we have outlined briefly some of the overall thinking that should go along with the more detailed parts we want to discuss next.

MEASURING THE INDIVIDUAL PARTS OR FUNCTIONS OF THE BUSINESS

The first breakdown of the total business in an operations analysis is to separate revenues or resources from costs or obligations. Concerned with having cash resources to meet cash obligations, we look at it from the cash point of view. Will the cash available meet the cash requirements of all the expenses in the strict accounting sense, plus the cash required for principal repayments on the debt, plus the cash required for plant replacements? For the overall business it is relatively simple to measure cash revenue against cash expenses plus principal payments required. Since extensive studies in the industry have shown that replacement requirements can be met by providing 1 percent of plant cost over the long haul, it is easy to figure that much as an average yearly cash requirement, even though one year might be more and another year might be less.

Going on, then, let's see how we measure the component parts.

REVENUES

Since revenues are the life-blood of the business, it is well to have a good look at them. The volume of our sales - that is the level of kwh consumption - is one of the key factors influencing our revenues. How can we measure it? We find the simplest and best way is to graph the overall kwh sold to each class of our consumer, and to graph the average kwh consumption per consumer for each class. Then we can see

our trends. If we plot also the kwh estimates in our feasibility studies, we can see how our actual progress compares with the progress we expected to make when our business was set up, our loans studied, and our goals established for the physical facilities we are now operating. If we are falling short, we know where and how much. We know where to direct our efforts at building the business up.

EXPENSES

Expenses are classified by our uniform system of accounts functionally - that is according to the purposes for which we spent the money. From that we get our basic breakdown of expenses. That functional classification of expenses makes it possible for us to relate expenditures with the factors which cause or influence them. For example, we do not find a single expense called "salaries." We could not relate total salaries with much of anything because we spend our total salary money for a wide variety of reasons - every function in the business causes salary expense. Instead we find accounts such as consumer accounting and collecting expense into which some of our salary costs go. We can relate consumer accounting and collecting expense with our consumers - they are related. We make use of this basic functional arrangement in business analysis by dealing in terms of UNIT MEASUREMENTS. So many dollars of cost PER CONSUMER or PER MILE OF LINE or PER DOLLAR OF INVESTMENT. This is sometimes called "ratio analysis" - but do not be fooled into thinking that "ratio analysis" implies any high-powered mathematics - the only arithmetic involved is simple division. Now, having decided to measure our expenses on a unit basis, such as per consumer, the next problem is to decide upon the unit to be used. Again simple common sense tells us that each item of expense should be measured in accordance with, or in terms of, the factor which has the most influence on the amount of money we spend for that item of expense. We do not have time today to go through the whole list of expenses, but let's take a few examples and have a look at them. Let's also stick to major groups of accounts, as set up on the REA operating reports, rather than individual detailed accounts.

Cost of Power. The first item we come to is the cost of power, and it is a tough one. There are so many factors which influence it that we generally try to measure it several ways. One is as a percentage of total revenues. Another is the ratio of power cost to total utility plant. Another is the cost of power per kwh sold. Power costs are to a considerable extent controllable on a long range basis, but they are less subject to immediate control in day to day management than many other expenses. In studying power costs many other factors need to be considered, such as alternate power sources, the shape and trends of kw demand curves, lead factor trends, power factor trends, etc. We don't have time, therefore, to study such costs in detail here today.

Total Distribution Expenses. Distribution expenses, including maintenance and operations, are generally measured in terms of unit costs per dollar of investment

in distribution plant and per mile of line. The reason is that the amount, or size, of the distribution plant to be operated and maintained, measured in terms of dollars invested or physical length, has an important bearing on the amount of money spent to operate and maintain it.

Consumers Accounting and Collecting Expense. Again the obvious unit to use in measuring these costs is the consumer - so much cost per consumer, because the consumer is the basic unit of cause for our incurring the expense.

Now, we said at the beginning that analysis consists of measuring, and that measuring consists of comparing some unknown or unevaluated quantity with a known or fixed standard. We have established a series of units, in terms of which we are going to measure or compare our expenses. Our next problem is to answer the question, "Compare them with what?" - and the question, "Why?" is always vital. We have several things with which to compare them.

1. We can compare this year's expenses for our own individual business with our own previous years' expenses. Why? What does that tell us? We can see our trends - we can see whether we are heading in a good direction or a bad direction. We can see whether this year is good or bad compared to last year, PROVIDED WE HAVE DONE AN ADEQUATE JOB IN BOTH YEARS. We cannot, of course, let our maintenance expense go down and down by not maintaining our facilities and think we are doing better and better, because we will fail in all of our basic objectives - our lines will fall down on our heads sooner or later.
2. We can compare this year's expenses with our own planned program reflected in our operating budget. Why? To measure our actual performance with our plan of action for the year - to see if we did as well as we decided we wanted to do when we set up our campaign plan for the year.
3. We can compare our expenses with the expenses of other groups, measured in the same unit terms. It is here, when we go outside to get the benefit of industry-wide experience that we come the closest to having absolute "standards" because data reflecting industry-wide experience reflects a large total of managerial ability, and minimizes the influence of special circumstances and unusual conditions.

At this point, I should like to make clear a very vital consideration in any business analysis. That is that we must realize that our comparisons do not tell the whole story. Our comparisons merely flag the phases of our operations which should be studied in detail to find out WHY this or that expense is out of line. It is the cause of high or low expense upon which we must base our judgment in evaluating the situation. For example, if distribution maintenance expense is high this year, and if we have cleared up a large volume of deferred maintenance left over from previous years, we know that the high cost was to be expected and we evaluate the situation accordingly. We may very likely study our planning and revise our operations in the future

to cut costs over the long run by a consistent planned maintenance program covering our whole system on a regular basis, but we don't worry too much over the fact that this year's expense was out of line.

This brings up another problem in making an analysis - how to relate the dollars spent with the results accomplished physically. If our revenues and resources permit, we can operate the business on a gold-plated plush basis with all the fancy trimmings and still meet our obligations. If we do, however, we are not meeting objective No. 2 which says we want to provide service AT THE LOWEST POSSIBLE COST. On the other hand we can operate the business and render good service with a minimum of fancy trimmings, with a maximum of the "make-do" approach. There are all shades between the two extremes, and there are a few cases where insufficient money is spent to maintain good service consistently over the long run.

One more point which deserves our careful consideration is the question of accounting accuracy. We mentioned our "UNIFORM system of accounts." It is obvious that if any one business does not classify and record its expenses UNIFORMLY in accordance with the rest of the industry, no valid comparisons can be made because the same functional expenditures would not be compared. The same thing would be true for the same business if it were not consistent in its accounting.

BETTER TOOLS ARE BEING DEVELOPED

Now, if I may, I should like to mention briefly some of the plans for future progress which are under way in so far as the REA program is concerned. As you know, the Engineering Division has a technical operations and maintenance program in progress which will be of great help in measuring the physical results accomplished in operating and maintaining our electric plant facilities. It will be of great help in planning our programs to accomplish our objectives.

Another program which is getting underway is the Management Division's program to provide more accurate and more detailed unit measurements, or standards of performance. The progress of the rural electrification industry calls for more refinements and better guidelines for improving service, for minimizing costs consistent with good service, and for the long range objective of remaining in business permanently under local ownership and control. The performance standards program is seeking to develop unit measurement guides which reflect some of the many other factors which affect costs. The studies being made are all based on your own actual experience. We all know that costs are affected by such factors as size, age, compactness of the lines, geographic conditions, etc. Although they will take time and careful handling, the aim in these studies is to find out how much variance in unit costs differences in size, age, compactness, etc. can be expected to make. Research is being carried out to find better ways to measure size, for example.

When you boil it all down, the things we would really like to measure basically are cost variances caused by different methods used, different procedures, different planning, different approaches in supervision - different management techniques. Why? Because these are the controllable things - these are the things that can be changed to cut costs if better methods, procedures, organization structures are found. We cannot change our size, or our age, or our compactness, or our geographic conditions. Therefore, if we could measure exactly and allow for, or eliminate the effects of the uncontrollable factors influencing our costs, we would be able to measure exactly the results on the cost of our controllable factors and we would be in a much better position to do something about them. It is not possible to do that precisely, but we are trying to do much better than we have in the past. It is a fact-finding proposition, and we all have quite a stake in it. We are all interested in cutting costs and improving service to consumers, as this meeting demonstrates. May I therefore venture to suggest that you give it careful consideration, and send to your Management Division Section Head any suggestions you may have along this line? If we all work together, pool our know-how, and get recorded control over the facts in this industry, we can improve the efficiency and lower our unit costs in this industry.

CONCLUSION - WHAT LIES BEYOND THE BUSINESS ANALYSIS

In conclusion, let me say that we have discussed a little of the how to measure the business we have set up for the purpose of accomplishing certain specified objectives. We have mentioned the thought that evaluation of that business is the next step beyond the simple measurement of it. I should like to leave with you one more thought - a most important one. That is the fact that up to this point all our analyzing, our measuring, and our evaluating add up to no more than **DIAGNOSIS OF THE BUSINESS**. We have accomplished nothing more than an understanding of some of the faults, ailments, and strengths of our business. The next step in managing a business, after diagnosis, is finding a **CURE** for its weaknesses. Usually we cannot cure our weaknesses until after we have diagnosed them, but the diagnosis, or analysis, does not provide the cure. The cure for our problems must come through **CHANGE FOR THE BETTER** - change in the controllable elements, some of which we have mentioned, such as methods used, procedures, planning or lack thereof, approaches in supervision of people, and a great many other management techniques. We emphasize change because it is just human nature to resist change - yet no change equals nothing - you can't improve without changing something.

Therefore, study your organization, your methods, your procedures, your work assignments, your supervision, your planning if you want to find the corners you can cut. Find where you need to know more about your business - eliminate duplication, waste motion and time - simplify - "make-do" - and balance your resources with your real requirements. Write down the things you find and what you can do about them. That is the **HOW OF CUTTING UNIT COSTS**.

